**Module 3: Critical Thinking Assignment**

**Part 1:**

Write a program that calculates the total amount of a meal purchased at a restaurant. The program should ask the user to enter the charge for the food and then calculate the amounts with an 18 percent tip and 7 percent sales tax. Display each of these amounts and the total price.

**Pseudocode:**

START

// Prompt user for meal charge

PRINT "Enter the charge for your meal: "

READ meal\_charge

// Define calculations for tip, tax, and total

DEFINE FUNCTION calculate\_tip(meal\_charge):

RETURN meal\_charge \* 0.18

DEFINE FUNCTION calculate\_tax(meal\_charge):

RETURN meal\_charge \* 0.07

DEFINE FUNCTION calculate\_total(meal\_charge):

RETURN meal\_charge + calculate\_tip(meal\_charge) + calculate\_tax(meal\_charge)

// Perform calculations

tip = calculate\_tip(meal\_charge)

tax = calculate\_tax(meal\_charge)

total = calculate\_total(meal\_charge)

// Display results

PRINT "Meal Charge: ", meal\_charge

PRINT "Tip (18%): ", tip

PRINT "Tax (7%): ", tax

PRINT "Total Price: ", total

END **Code:**

meal\_charge = float(input("Enter the charge for your meal: "))  
tip = lambda x: x \* 0.18  
tax = lambda x: x \* 0.07  
total = lambda x: x + tip(x) + tax(x)  
  
print(f"Meal Charge: ${meal\_charge:.2f}")  
print(f"Tip (18%): ${tip(meal\_charge):.2f}")  
print(f"Tax (7%): ${tax(meal\_charge):.2f}")  
print(f"Total Price: ${total(meal\_charge):.2f}")

**Part 1 Screenshot:**

A screenshot of a computer program

Description automatically generated

**Part 2:**

Many people keep time using a 24-hour clock (11 is 11am and 23 is 11pm, 0 is midnight). If it is currently 13 and you set your alarm to go off in 50 hours, it will be 15 (3pm). Write a Python program to solve the general version of the above problem. Ask the user for the time now (in hours) and then ask for the number of hours to wait for the alarm. Your program should output what the time will be on a 24-hour clock when the alarm goes off.

**Pseudocode:**

START

// Prompt user for current time and hours to wait

PRINT "Enter the current time (0-23): "

READ current\_time

PRINT "Enter the number of hours to wait: "

READ wait\_hours

// Define function for calculating alarm time

DEFINE FUNCTION calculate\_alarm\_time(current\_time, wait\_hours):

RETURN (current\_time + wait\_hours) % 24

// Calculate and display the alarm time

alarm\_time = calculate\_alarm\_time(current\_time, wait\_hours)

PRINT "The alarm will go off at: ", alarm\_time, ":00"

END

**Code:**

current\_time = int(input("Enter the current time (0-23): "))

wait\_hours = int(input("Enter the number of hours to wait: "))

alarm\_time = lambda current, wait: (current + wait) % 24

print(f"The alarm will go off at: {alarm\_time(current\_time, wait\_hours):02d}:00")

A screenshot of a computer program

Description automatically generated**Part 2 Screenshot:**